

FORM PTO-1390  
(REV 11-98)

ATTORNEY DOCKET NUMBER

3401-4022

U S APPLICATION NO (If known see 37 CFR 1.51)

09/486790

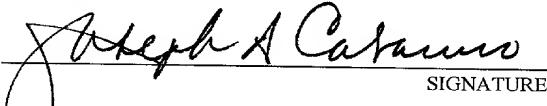
INTERNATIONAL APPLICATION PCT FR99/01591	INTERNATIONAL FILING DATE 02 Jul 1999 (02.07.99)	PRIORITY DATE CLAIMED 02 July 1998 (02.07.98)
TITLE OF INVENTION A VEHICLE ALTERNATOR HAVING A WINDING INSULATED FROM ITS CASE		
APPLICANT(S) FOR DO/EO/US Laurent PAQUET		

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1.  This is **FIRST** submission of items concerning a filing under 35 U.S.C. 371.
2.  This is **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371.
3.  This express request to begin national examination procedures (35 U.S.C. 371(f) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371 (b) and PCT Articles 22 and 39 (1).
4.  A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.
5.  A copy of the International Application as filed (35 U.S.C. 371(c)(2))
  - a.  is transmitted herewith (required only if not transmitted by the International Bureau).
  - b.  has been transmitted by the International Bureau.
  - c.  is not required, as the application was filed in the United States Receiving Office (RO/US).
6.  A translation of the International application into English (35 U.S.C. 371(c)(2)). with oath
7.  Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))
  - a.  are transmitted herewith (required only if not transmitted by the International Bureau).
  - b.  have been transmitted by the International Bureau.
  - c.  have not been made; however, the time limit for making such amendments has NOT expired.
  - d.  have not been made and will not be made.
8.  A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
9.  An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).[unsigned]
10.  A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).

**Items 11. to 16. below concern document(s) or information included.**

11.  An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
12.  An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
13.  A **FIRST** preliminary amendment.
  - A **SECOND** or **SUBSEQUENT** preliminary amendment.
14.  A substitute specification.
15.  A change of power of attorney and/or address letter.
16.  Other items or Information:
  - a. copy of first page of International Application
  - b. copy of International Search Report

U.S. APPLICATION NO (if known, see 37 CFR 1.51) <b>09/486790</b>		INTERNATIONAL APPLICATION NO <b>PCT FR/99/01591</b>	ATTORNEY'S DOCKET NO <b>3401-4022</b>
17. <input checked="" type="checkbox"/> The following fees are submitted:		CALCULATIONS PTO USE ONLY	
<b>BASIC NATIONAL FEE (37 CFR 1.492 (a) (1) - (5) ):</b>			
Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2) paid to USPTO and International Search Report not prepared by the EPO or JPO <b>\$970.00</b>			
International preliminary examination fee (37 CFR 1.482) not paid to USPTO but International Search Report prepared by the EPO or JPO <b>\$840.00</b>			
International preliminary examination fee (37 CFR 1.482) not paid to USPTO but international search fee (37 CFR 1.445(a)(2) paid to USPTO <b>\$760.00</b>			
International preliminary examination fee paid to USPTO (37 CFR 1.482) but all claims did not satisfy provisions of PCT Article 33 (1) - (4) <b>\$670.00</b>			
International preliminary examination fee paid to USPTO (37 CFR 1.482) and all claims satisfied provisions of PCT Article 33(1) - (4) <b>\$96.00</b>			
ENTER APPROPRIATE BASIC FEE AMOUNT = <b>\$840.00</b>			
Surcharge of <b>\$130</b> for furnishing the oath or declaration later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(e)). <b>\$</b>			
CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE
Total claims	17 - 20 =	0	X \$18.00 <b>\$ 0</b>
Independent claims	2 - 3 =	0	X \$78.00 <b>\$ 0</b>
MULTIPLE DEPENDENT CLAIM(S) (if applicable)		+ \$260.00 <b>\$ 0</b>	
<b>TOTAL OF ABOVE CALCULATIONS = \$840.00</b>			
Reduction of $\frac{1}{2}$ for filing by small entity, if applicable. A Small Entity Statement must also be filed (Note 37 CFR 1.9, 1.27, 1.28). <b>\$</b>			
<b>SUBTOTAL = \$840.00</b>			
Processing fee of <b>\$130.00</b> for furnishing the English translation later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(f)). <b>+</b> <b>\$</b>			
<b>TOTAL NATIONAL FEE = \$840.00</b>			
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). <b>\$40.00</b> per property <b>+</b> <b>\$</b>			
<b>TOTAL FEES ENCLOSED \$840.00</b>			
		Amount to be refunded: <b>\$</b>	
		charged <b>\$</b>	
<p>a. <input type="checkbox"/> A check in the amount of \$840.00 to cover the above fees is enclosed.</p> <p>b. <input type="checkbox"/> Please charge my Deposit Account No. _____ in the amount of \$ _____ to cover the above fees.</p> <p>c. <input type="checkbox"/> The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 13-4500; order no. 3401-4022. A duplicate copy of this sheet is enclosed.</p>			
Dated: March <b>7</b> , 2000			
NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.			
SEND ALL CORRESPONDENCE TO: Morgan & Finnegan LLP 345 Park Avenue New York, NY 10054-0053			
Telephone: 212-758-4800 Telecopier: 212-751-6849			
 <b>SIGNATURE</b> Joseph A. Calvaruso NAME 28,287 REGISTRATION NO.			

5 IN THE UNITED STATES PATENT AND TRADEMARK OFFICE (DO/EO/US)

10 Applicants : Laurent PAQUET  
10 International Application No. : PCT/FR99/01591  
15 International Filing Date : 02 July 1999 (02 07.99)  
20 U.S. Serial No. : To be assigned  
U.S. Filing Date : To be assigned  
20 Group Art Unit : To be assigned  
Examiner : To be assigned  
25 For : A VEHICLE ALTERNATOR HAVING A WINDING  
INSULATED FROM ITS CASE

30 PRELIMINARY AMENDMENT

30 Assistant Commissioner  
For Patents  
Box PCT  
35 Washington, D.C. 20231

**Attention: DO/EO/US**

40 S I R:

Preliminary to a substantive examination on the  
merits, please amend the above identified application as  
follows:

45

Insert the attached -- Title Page --

5

IN THE ABSTRACT

Insert the Abstract Of The Disclosure submitted herewith  
on a separate sheet of paper as page 9.

10

IN THE SPECIFICATION

At page 1 delete [A VEHICLE ALTERNATOR HAVING A WINDING  
INSULATED FROM ITS CASE]

15 At page 1, before the line reading "The present invention  
relates to alternators or to," insert -- Background of the  
Invention --

At page 1, before the line reading "An object of the  
invention is ensure that the," insert -- Brief Summary of the  
Invention --

20 At page 3, before the line "Other characteristics and  
advantages of the," insert -- Brief Description of the  
Drawings --

At page 3, before the line "With reference to Figures 1  
to 3, the alternator 2," insert -- Detailed Description of  
25 the Invention --

IN THE CLAIMS

Cancel claims 10, 11 and 12 and amend claims 1 through 9  
30 as follows:

5 --1. [/] (amended) A vehicle alternator [(2)] comprising  
a case [(4)], a stator winding [(14)], and an electrically-  
insulating element [(18)] interposed between the case [(4)]  
and the winding [(14)], the insulating element [(18)] being a  
solid body mounted on one of the case and the winding, [the  
10 alternator being characterized in that] wherein the insulating  
element [(18)] has at least one duct [(26)] extending through  
an orifice [(32)] in the case [(6)].--

15 --2. [/] (amended) An alternator according to claim 1,  
[characterized in that] wherein the duct [(26)] extends from a  
front face of the insulating element [(18)].--

20 --3. [/] (amended) An alternator according to claim 1  
[or 2], [characterized in that] wherein the duct [(26)]  
extends so as to project from an inner side face [(24)] of the  
insulating element [(18)] towards an axis [(5)] of the  
stator.--

25 --4. [/] (amended) An alternator according to claim 1,  
[any one of claims 1 to 3, characterized in that] wherein the  
duct [(26)] receives a live wire twisted lead [(16)] of the  
winding [(14)].--

30 --5. [/] (amended) An alternator according to claim 3,  
[any one of claims 1 to 4, characterized in that] wherein the

5 insulating element [(18)] is interposed between the case and  
the winding radially relative to an axis [(5)] of the stator.-

--6. [/] (amended) An alternator according to claim 1,  
[any one of claims 1 to 5, characterized in that] wherein the  
10 insulating element [(18)] is interposed between the case and  
the winding axially relative to an axis [(5)] of the stator.--

--7. [/] (amended) An alternator according to claim 1,  
[any one of claims 1 to 6 characterized in that] wherein the  
15 insulating element [(18)] extends in register with an inner  
side face of the winding [(14)].--

--8. [/] (amended) An alternator according to claim 1  
[any one of claims 1 to 7 characterized in that] wherein the  
20 insulating element [(18)] has [an] a first indexing portion  
[(28), in particular a stud,] enabling the angular position of  
the stator around an axis [(5)] of the stator to be  
identified.--

25 --9. [/] (amended) An alternator according to claim 8,  
[characterized in that] wherein the first indexing portion  
includes a stud and wherein the case [(4)] has a second  
indexing portion [(30), in particular] having a groove[,]  
suitable for co-operating with the indexing portion [(28)] of  
30 the insulating element [(18)].--

5

Add new claims 13 through 17 as follows:

--13. An alternator according to claim 3, wherein the insulating element is interposed between the case and the winding axially relative to an axis of the stator.--

10

--14. An alternator according to claim 5, wherein the insulating element is interposed between the case and the winding axially relative to an axis of the stator.--

15

--15. An alternator according to claim 3, wherein the insulating element extends in register with an inner side face of the winding.--

20

--16. An alternator according to claim 5, wherein the insulating element extends in register with an inner side face of the winding.--

25

--17. An alternator according to claim 3, wherein the insulating element has a first indexing portion enabling the angular position of the stator around an axis of the stator to be identified.--

5

REMARKS

The above amendments have been made to conform with  
United States claim drafting criteria, eliminate character  
10 references and eliminate multiple dependent claims. No new  
matter was added to the application as a result of this  
amendment.

The Commissioner is hereby authorized to charge any  
additional fees which may be required for this amendment, or  
15 to credit any overpayment to Deposit Account No. 13-4500,  
Order No. 3401-4022. The Examiner is requested to telephone  
applicant's undersigned counsel at the number noted below if  
it will advance the prosecution of this case.

20  
Respectfully submitted,  
MORGAN & FINNEGAN, L.L.P.

25  
Dated: March 2 , 2000

By: Joseph A. Calvaruso  
Registration No. 28,287

30

35  
MORGAN & FINNEGAN, L.L.P.  
345 Park Avenue  
New York, New York 10154  
40 Tel. No. (212) 758-4800  
Fax No. (212) 751-6849

5

REMARKS

The above amendments have been made to conform with  
United States claim drafting criteria, eliminate character  
10 references and eliminate multiple dependent claims. No new  
matter was added to the application as a result of this  
amendment.

The Commissioner is hereby authorized to charge any  
additional fees which may be required for this amendment, or  
15 to credit any overpayment to Deposit Account No. 13-4500,  
Order No. 3401-4022. The Examiner is requested to telephone  
applicant's undersigned counsel at the number noted below if  
it will advance the prosecution of this case.

20

Respectfully submitted,

MORGAN & FINNEGAN, L.L.P.

25

Dated: March 2 , 2000

By: Joseph A. Calvaruso  
Registration No. 28,287

30

35

MORGAN & FINNEGAN, L.L.P.  
345 Park Avenue  
New York, New York 10154  
40 Tel. No. (212) 758-4800  
Fax No. (212) 751-6849

525557\_1

ABSTRACT OF THE DISCLOSURE

A vehicle alternator comprising a case, a stator winding, and an electrically-insulating element interposed between the case and the winding, the insulating element being a solid body mounted on one of the case and the winding. The insulating element has at least one duct extending through an orifice in the case.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
UNITED STATES PATENT APPLICATION

FOR; A VEHICLE ALTERNATOR HAVING A WINDING  
INSULATED FROM ITS CASE

INVENTOR:

Laurent PAQUET

French  
9 rue de Castel  
94000 Creteil, France



101 Rec'd PCT/PTO 26 JUN 2000  
PATENT  
Docket No. 3401-4022

**09/486,790**

.5 IN THE UNITED STATES PATENT AND TRADEMARK OFFICE (DO/EO/US)

10 Applicants : Laurent PAQUET  
10 U.S. Serial No. : 09/486,790  
U.S. Filing Date : March 2, 2000  
15 Group Art Unit : To be assigned  
Examiner : To be assigned  
20 For : A VEHICLE ALTERNATOR HAVING A WINDING  
INSULATED FROM ITS CASE

SUPPLEMENTAL PRELIMINARY AMENDMENT

25 Commissioner For Patents  
Washington, D.C. 20231

30 S I R:

35 Preliminary to a substantive examination on the  
merits, please amend the above identified application as  
follows:

IN THE CLAIMS

Amend claim 5 as follows:

40 5 (Twice amended) An alternator according to claim [3]  
1, wherein the insulating element is interposed between the  
case and the winding radially relative to an axis of the  
stator.

Add new claims 18 - 20 as follows:



PATENT  
Docket No. 3401-4022

5 18. A method of manufacturing a vehicle alternator having a case, a stator winding and an electrically insulating element disposed between the case and the winding, the method comprising the steps of

10 providing the insulating in the form of a solid body having at least one duct portion;

mounting the insulating element on one of the case and the winding, and

15 inserting the duct portion through an orifice in the case.

19. A method according to claim 18 comprising the step of mounting the insulating element on the winding.

20. A method according to claim 18 comprising the step of mounting the insulating element on the case.

REMARKS

Claim 5 has been amended to correct the dependency  
25 and new claims 18 - 20 have been presented to better describe the invention. No new matter has been added to the application as a result of this Amendment.



PATENT  
Docket No. 3401-4022

5

The Commissioner is hereby authorized to charge any additional fees which may be required for this amendment, or to credit any overpayment to Deposit Account No. 13-4500, Order No. 3401-4022. The Examiner is requested to telephone 10 applicant's undersigned counsel at the number noted below if it will advance the prosecution of this case.

Respectfully submitted,

MORGAN & FINNEGAN, L.L.P.

15

20 Dated: June 26, 2000

By: Joseph A. Calvaruso  
Registration No. 28,287

25

30 MORGAN & FINNEGAN, L.L.P.  
345 Park Avenue  
New York, New York 10154  
Tel. No. (212) 758-4800  
Fax No. (212) 751-6859

35



PATENT  
Docket No. 3401-4022

.5

The Commissioner is hereby authorized to charge any additional fees which may be required for this amendment, or to credit any overpayment to Deposit Account No. 13-4500, Order No. 3401-4022. The Examiner is requested to telephone 10 applicant's undersigned counsel at the number noted below if it will advance the prosecution of this case.

Respectfully submitted,

MORGAN & FINNEGAN, L.L.P.

15

20 Dated: June 20, 2000

By: Joseph A. Calvaruso  
Registration No. 28,287

25

30 MORGAN & FINNEGAN, L.L.P.  
345 Park Avenue  
New York, New York 10154  
Tel. No. (212) 758-4800  
Fax No. (212) 751-6859

35

551024\_1

A VEHICLE ALTERNATOR HAVING A WINDING INSULATED FROM ITS  
CASE

The present invention relates to alternators or to alternator-starters.

5 A vehicle alternator is known that comprises a case, a stator winding, and a solidified electrically-insulating varnish impregnating the end turns and the twisted leads of the winding so as to insulate them electrically from the adjacent case and so as to reinforce their mechanical strength. The neutral points of the winding is insulated in the same manner. Nevertheless, when subjected to the vibration due to operation, there is a major risk of the varnish being abraded and thus of the electrical insulation of the end 10 turns, the twisted leads, and the neutral point disappearing.

15 Document US-4 658 164 discloses a vehicle alternator in which an electrically-insulating screen is provided in the form of a separate piece extending between the stator winding and the case. That avoids the risk of abrasion. However, that document provides for the twisted leads to be returned along the screen and complicates connection 20 thereof.

25 An object of the invention is to ensure that the insulating protection is long-lasting without complicating the connection of the twisted leads.

30 To achieve this object, the invention provides a vehicle alternator comprising a case, a stator winding, and an electrically-insulating element interposed between the case and the winding, the insulating element being a solid body mounted on one of the case and the winding, wherein the insulating element has at least one duct 35 extending through an orifice in the case.

There is thus no risk of abrasion of the insulating element and as a result the protection is long-lasting.

In addition, the duct can receive a twisted lead of live outlet wires from the winding, which twisted lead is

thus electrically insulated from the case where it passes through the case, e.g. at the back plate of the case. In addition, the duct can receive the twisted lead before being installed in the case, thus making it possible to 5 guarantee the position of the twisted lead relative to the winding, e.g. a rectilinear position, prior to being received in the case.

Advantageously, the duct extends from a front face of the insulating element.

10 Advantageously, the duct extends so as to project from an inner side face of the insulating element towards an axis of the stator.

15 Thus, the duct is suitable for an arched twisted lead, i.e. one which does not leave the stator in register with a slot in the stack of laminations but is offset so as to be better placed, given the design of the electronic portion of the alternator, e.g. situated at the rear of the case.

20 Advantageously, the or each duct receives a live wire twisted lead of the winding.

Advantageously, the insulating element is interposed between the case and the winding radially relative to an axis of the stator.

25 Advantageously, the insulating element is interposed between the case and the winding axially relative to an axis of the stator.

Advantageously, the insulating element extends in register with an inner side face of the winding.

30 Advantageously, the insulating element has an indexing portion, in particular a stud, enabling the angular position of the stator around an axis of the stator to be identified.

35 Thus, the angular position of the stator about its axis is identified, making it easier to install, and guaranteeing that the twisted leads of live wires are properly positioned relative to the case, and in particular relative to the orifices therein.

Advantageously, the case has a second indexing portion, in particular a groove, suitable for co-operating with the indexing portion of the insulating element.

5 The invention also provides a method of  
manufacturing a vehicle alternator comprising a case, a  
stator winding, and an electrically-insulating element  
interposed between the case and the winding, wherein: the  
insulating element is supplied in the form of a solid  
10 body having at least one duct; the insulating element is  
mounted on one of the case and the winding; and the duct  
is inserted through an orifice in the case.

Advantageously, the insulating element is mounted on the winding.

15 Advantageously, the insulating element is mounted on  
the case.

Other characteristics and advantages of the invention will appear on reading the following description of a preferred embodiment and of a variant given as non-limiting examples. In the accompanying drawings:

- Figure 1 is a fragmentary axial section view of an alternator of the invention showing the stator and the case;

25 - Figures 2 and 3 are two perspective views from  
above and from below of the insulating element of  
Figure 1;

30 - Figures 4 and 5 are two views analogous to Figure 1 showing a variant embodiment, respectively level with one of the twisted leads of live wires and level with the neutral point; and

- Figures 6 and 7 are two views analogous to Figures 2 and 3, showing the insulating element of Figures 4 and 5.

35 With reference to Figures 1 to 3, the alternator 2 comprises in conventional manner a shaft of axis 5 and a case of which only a shell 4 is shown herein. The shell

has a plane rear wall 6 perpendicular to the axis 5 forming a rear plate with a bearing for the shaft, and a cylindrical side wall 8 about the axis 5. The shell is closed by a cover that forms a front bearing and that is not shown. The alternator has a stator 10 comprising a stack of laminations 12 on which a winding 14 is wound. The wires of the winding are received in slots (not shown) in the stack of laminations 12 extending parallel to the axis. The winding 14 has end turns that emerge through the rear axial end of the stack of laminations 12. This winding has twisted leads 16 of live wires, in this case three such loads since the winding is a so-called "single" winding. The twisted leads 16 emerge from a rear axial end face of the winding 14.

In accordance with the invention, the alternator has an electrically-insulating element 18 which is constituted in this case by a single piece of plastics material. This element 18 is generally annular in shape about the axis 5. Its section in a plane radial to the axis 5 is in the form of a channel section defining a plane web or rear axial end wall 20 and two flanges or cylindrical side walls about the axis 5, comprising an outer flange 22 and an inner flange 24 that face each other. The insulating element 18 has three cylindrical ducts 26 extending with axes parallel to the axis 5 so as to project from the web 20 away from the flanges 22 and 24. The three ducts 26 are close to one another around the axis 5.

The outer flange 22 carries a stud 28 extending radially outwards. The side wall 8 of the shell has an inside groove 30 extending parallel to the axis 5 and suitable for receiving the stud 28 when the stator is mounted in the case. In Figure 1, the stud 28 and the groove 30 are shown as lying in the section plane of the figure for greater clarity, however the preferred position for the stud 28 (and thus for the groove 30) is as shown in Figure 3.

During assembly of the alternator, the stator is built and the insulating element 18 that has previously been made by molding is mounted coaxially on the winding 14, being placed over its end turns and with its three 5 twisted leads 16 being inserted into the three ducts 26 respectively. As a result, the insulating element 18 covers the inner and outer faces and the axial end face of the end turns. The edges of the insulating element 18 come into axial abutment against the stack of laminations 10. Thereafter, the stator 10 is mounted inside the shell 4. Having the stud 28 received in the groove 30 then makes it possible to ensure that the stator 10 is properly positioned relative to the shell 4 and angularly about the axis 5 so that the twisted leads 16 and the 15 ducts 26 are in register with orifices 32 formed through the rear wall 6 of the shell, and then penetrate through said orifices 32. Once assembly has been completed, the insulating element 18 is interposed axially between the end wall 6 and the winding 14, and radially between the 20 side wall 8 and the winding 14. In addition, it extends in register with an inside side face of the winding. This ensures that the end turns and the twisted leads are electrically insulated from the case 4, including where they pass through the orifices 32.

25 In the variant of Figures 4 to 7, the winding 14 is identical to that of Figure 1, except that the twisted leads 16 have been offset so as to project from the winding in a radial direction towards the axis 5. Consequently, the ducts 26 are likewise formed to project 30 from the inner flange 24 of the insulating element 18 so as to receive the twisted leads 16 in this configuration. In addition, the live wire twisted leads 16 are six in number in this embodiment since the winding is said to be "double". There are thus also six ducts 26. The neutral 35 points 34 of the winding 14 is shown in Figure 5.

It is possible to mount the insulating element 18 in the shell 4 prior to fitting the stator 10 thereon.

The insulating element 18 can be built up from a plurality of parts fixed to one another prior to being fitted to the alternator.

## CLAIMS

1/ A vehicle alternator (2) comprising a case (4), a stator winding (14), and an electrically-insulating element (18) interposed between the case (4) and the winding (14), the insulating element (18) being a solid body mounted on one of the case and the winding, the alternator being characterized in that the insulating element (18) has at least one duct (26) extending through an orifice (32) in the case (6).

10

2/ An alternator according to claim 1, characterized in that the duct (26) extends from a front face of the insulating element (18).

15

3/ An alternator according to claim 1 or 2, characterized in that the duct (26) extends so as to project from an inner side face (24) of the insulating element (18) towards an axis (5) of the stator.

20

4/ An alternator according to any one of claims 1 to 3, characterized in that the or each duct (26) receives a live wire twisted lead (16) of the winding (14).

25

5/ An alternator according to any one of claims 1 to 4, characterized in that the insulating element (18) is interposed between the case and the winding radially relative to an axis (5) of the stator.

30

6/ An alternator according to any one of claims 1 to 5, characterized in that the insulating element (18) is interposed between the case and the winding axially relative to an axis (5) of the stator.

35

7/ An alternator according to any one of claims 1 to 6, characterized in that the insulating element (18) extends in register with an inner side face of the winding (14).

DRAFTING OFFICE

8/ An alternator according to any one of claims 1 to 7, characterized in that the insulating element (18) has an indexing portion (28), in particular a stud, enabling the angular position of the stator around an axis (5) of the stator to be identified.

5  
9/ An alternator according to claim 8, characterized in that the case (4) has a second indexing portion (30), in particular a groove, suitable for co-operating with the 10 indexing portion (28) of the insulating element (18).

10  
15  
10/ A method of manufacturing a vehicle alternator comprising a case (4), a stator winding (14), and an electrically-insulating element (18) interposed between the case and the winding, the method being characterized in that the insulating element (18) is supplied in the form of a solid body having at least one duct, the insulating element is mounted on one of the case and the winding, and the duct is inserted through an orifice in 20 the case.

11/ A method according to claim 10, characterized in that the insulating element (18) is mounted on the winding (14).

25  
12/ A method according to claim 10, characterized in that the insulating element (18) is mounted on the case (4).

## A B S T R A C T

A VEHICLE ALTERNATOR HAVING A WINDING INSULATED FROM ITS  
CASE

5

A vehicle alternator (2) comprising a case (4), a stator winding (14), and an electrically-insulating element (18) interposed between the case (4) and the winding (14), the insulating element (18) being a solid body mounted on one of the case and the winding. The insulating element (18) has at least one duct (26) extending through an orifice (32) in the case (6).

10

15

20

25

30

Translation of the title and the abstract as they were when originally filed by the  
35 Applicant. No account has been taken of any changes that may have been made  
subsequently by the PCT Authorities acting ex officio, e.g. under PCT Rules 37.2,  
38.2, and/or 48.3.

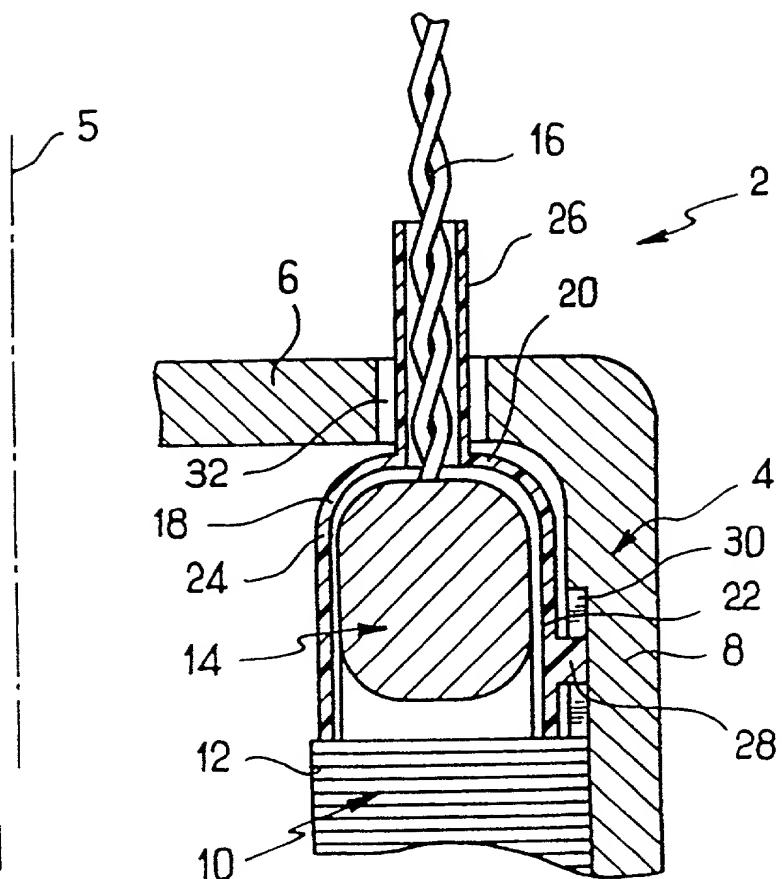


FIG. 1

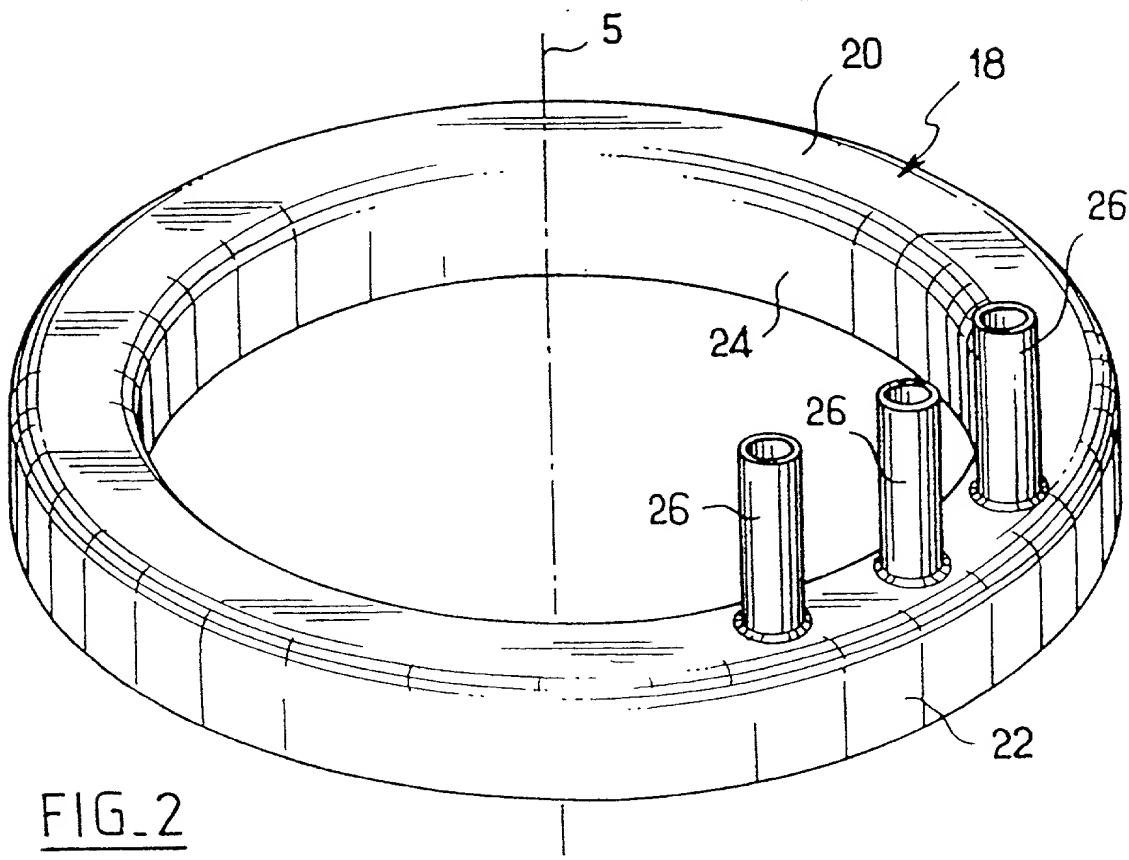
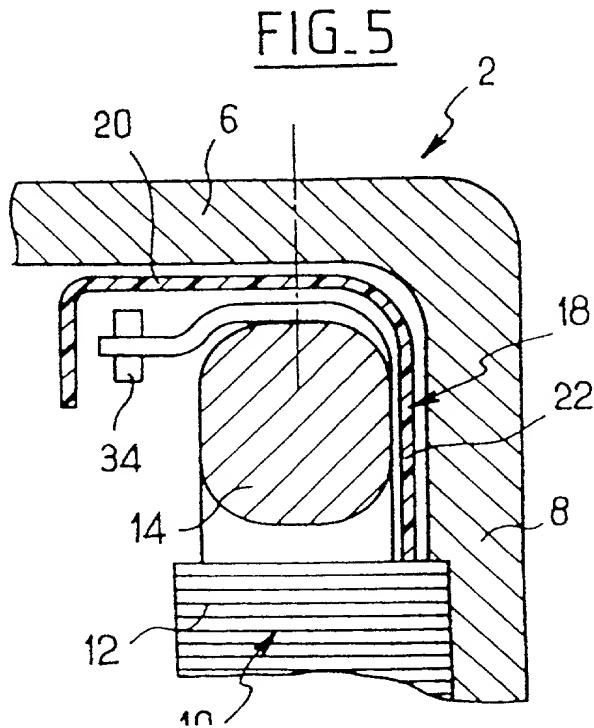
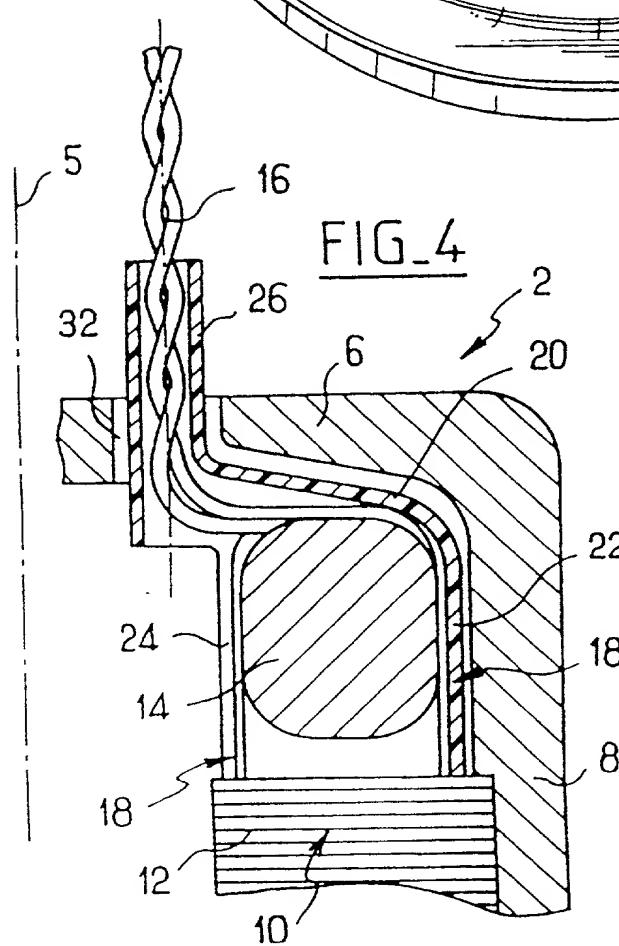
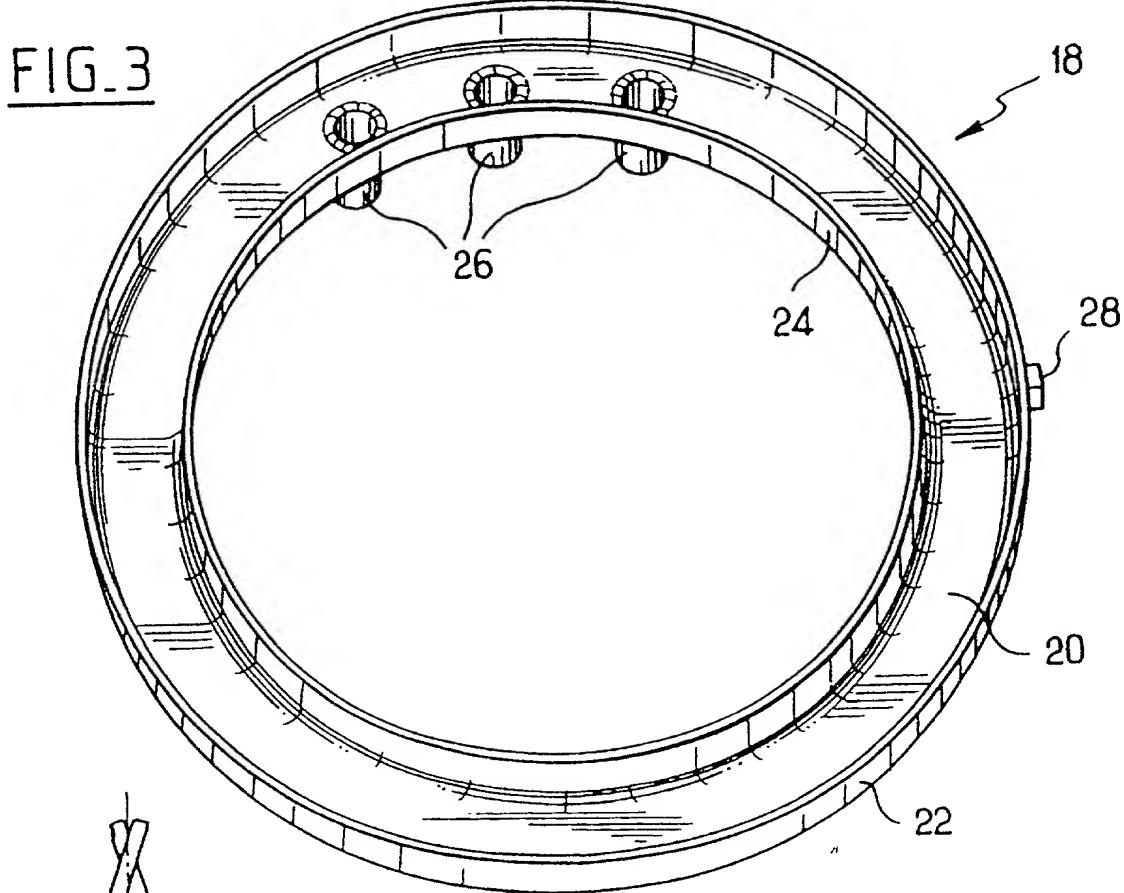


FIG. 2



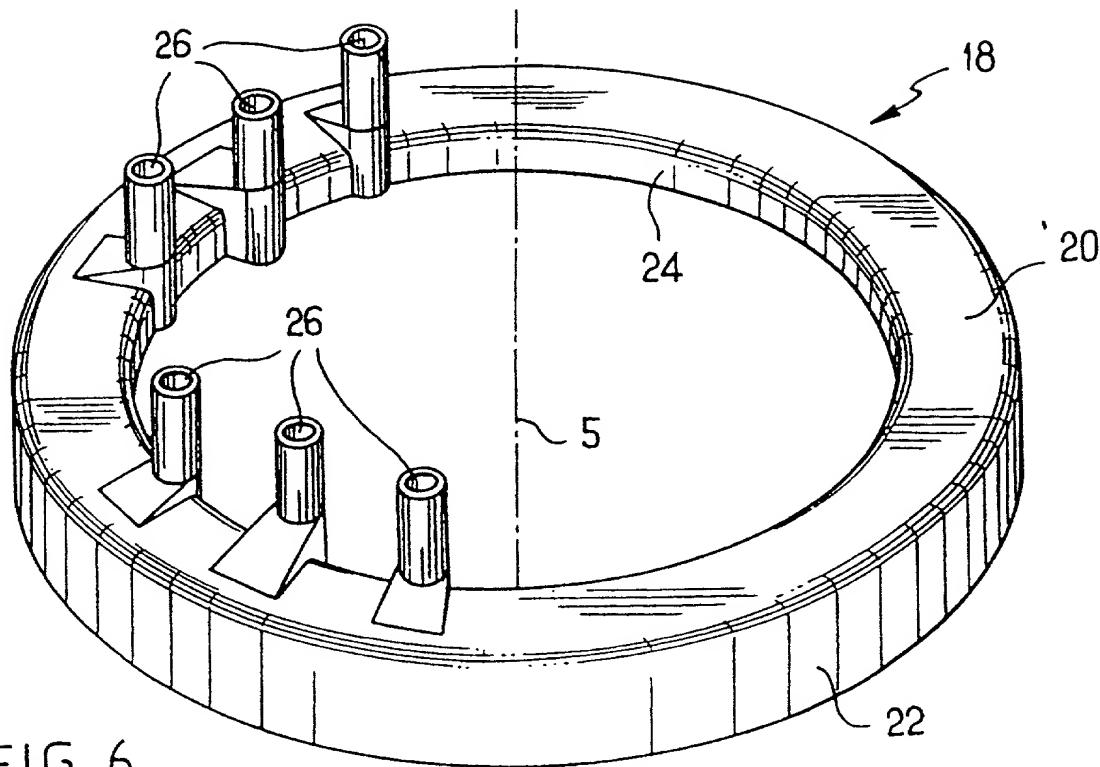


FIG. 6

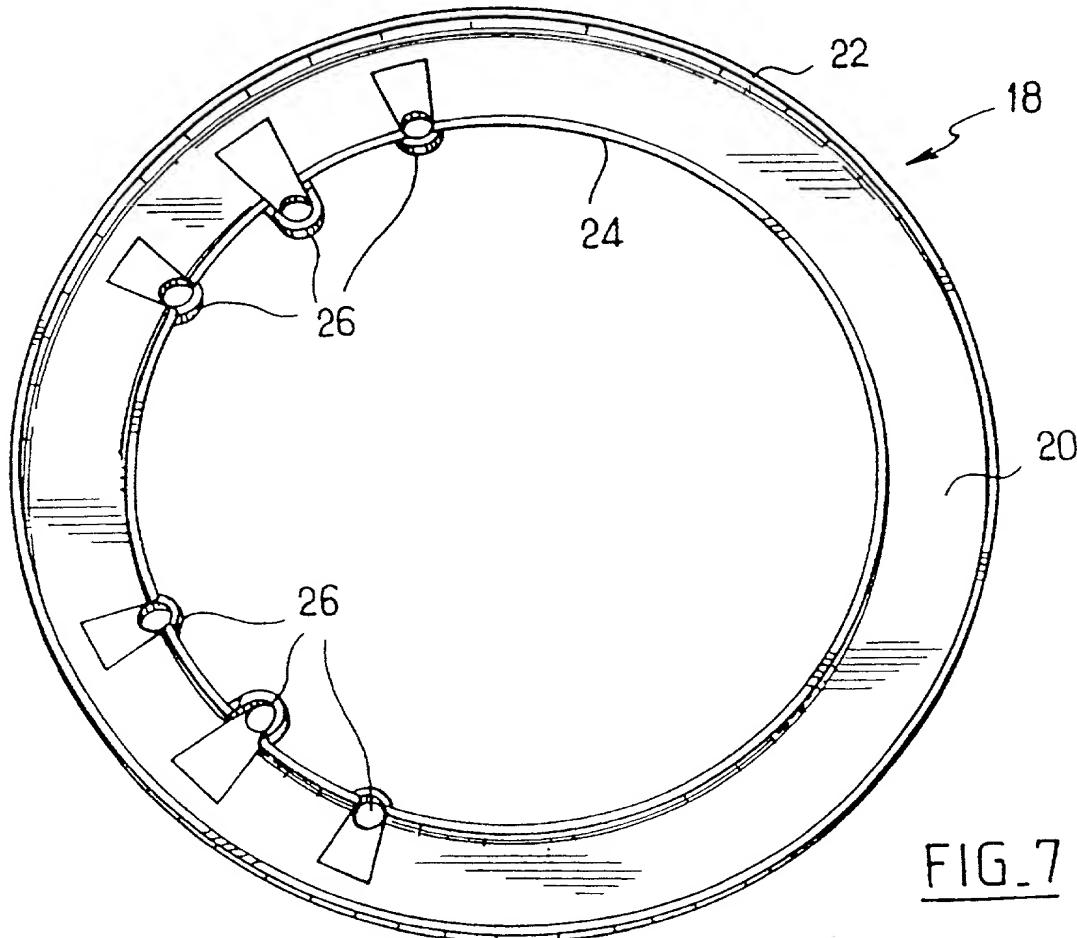


FIG. 7

## DECLARATION AND POWER OF ATTORNEY

As a below named inventor, I hereby declare that: my residence, post office address and citizenship are as stated below next to my name; I believe I am the original, first, and sole inventor (if only one name is listed below) or an original, first, and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

## A VEHICLE ALTERNATOR HAVING A WINDING INSULATED FROM ITS CASE

the specification of which  is attached and/or  was filed on JULY 2, 1999 PCT International Application No. PCT/FR99/00591  
and was amended on  (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above, I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR § 1.56.

I hereby claim foreign priority benefits under 35 U.S.C. § 119(a)-(d) or § 365(b) of any foreign application(s) for patent or inventor's certificate or § 365(a) of any PCT International application(s) designating at least one country other than the United States, listed below and have also identified below, any foreign application(s) for patent or inventor's certificate, or any PCT International application(s) having a filing date before that of the application(s) of which priority is claimed:

Country	Application Number	Date of Filing	Priority Claimed Under 35 U.S.C. 119
FRANCE	98 08455	JULY 2, 1998	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO

I hereby claim the benefit under 35 U.S.C. § 119(e) of any United States provisional application(s) listed below:

Application Number	Date of Filing

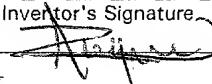
I hereby claim the benefit under 35 U.S.C. § 120 of any United States application(s) or § 365<sup>©</sup> of any PCT International application(s) designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application(s) in the manner provided by the first paragraph of 35 U.S.C. § 112, I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR § 1.56 which became available between the filing date of the prior application(s) and the national or PCT International filing date of this application:

Application Number	Date of Filing	Status (Patented, Pending, Abandoned)
99/01591	JULY 2, 1999	Pending

I hereby appoint the following attorney and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office *Jerome G. Lee (Reg. No. 16,836), Joseph A. Calvaruso (Reg. No. 28,287)* *2*. My attorneys with full power of substitution and revocation, to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith.

Address all communications to MORGAN & FINNEGAN, 345 Park Avenue, New York, N.Y. 10154 Phone: (212) 758-4800

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Full Name of First Inventor <b>PAQUET Laurent</b>	Inventor's Signature 	Date <b>03/03/2000</b>
Residence <b>9, rue du Castel - 94000 CRETEIL - France</b>		Citizenship <b>FRENCH</b>
Post Office Address <b>The same as residence</b>		
Full Name of Second Inventor	Inventor's Signature	Date
Residence	Citizenship	
Post Office Address		